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October 10, 2014

VIA FEDERAL EXPRESS

Honorable Shira A. Scheindlin  
U.S. District Court for the Southern District of New York  
500 Pearl Street, Room 1620  
New York, New York 10007-1312

Re: *In Re MTBE Products Liability* MDL 1358  
This Document Relates to: *Orange County Water District v. Unocal Corp., et al.*  
**Submission of Supplemental Declaration of Dr. Wheatcraft in Support of  
Plaintiffs' Oppositions to Defendants' Summary Judgment Motions**

Dear Judge Scheindlin:

Pursuant to the Court's direction at the October 6, 2014, telephonic conference concerning summary judgment motions pending in the above matter, plaintiff Orange County Water District submits the attached supplemental declaration of its modeling expert, Dr. Wheatcraft.

Respectfully Submitted,



Tracey L. O'Reilly

Encl.

cc: All Counsel (via LNFS)

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

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In re: Methyl Tertiary Butyl Ether ("MTBE")	:	<b>Master File No. 1:00-1898</b>
Products Liability Litigation	:	<b>MDL No. 1358 (SAS)</b>
	:	<b>M21-88</b>
	:	
This Document Relates To:	:	The Honorable Shira A. Scheindlin
<i>Orange County Water District v. Unocal</i>	:	
<i>Corporation, et al.</i> , Case No. 04 Civ. 4968	:	
(SAS).	:	
	:	
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**SUPPLEMENTAL DECLARATION OF STEPHEN W. WHEATCRAFT, Ph.D.  
IN SUPPORT OF PLAINTIFF'S OPPOSITION TO MOTION FOR  
SUMMARY JUDGMENT**

**DECLARATION OF STEPHEN W. WHEATCRAFT**

I, Stephen W. Wheatcraft, hereby declare as follows:

1. As part of my work in this case I prepared a contaminant transport model based on the geological characteristics of the aquifer in Orange County as explained in my expert report in this case.
2. As stated in my deposition, expert report, and declaration submitted on July 21, 2014, the contaminant transport model I prepared was run for all focus stations, using all available actual MTBE data from these stations.
3. As I stated at my deposition and in my expert report, “my model shows that these sources [focus plume stations] impact these wells.” (Jan. 17, 2012, Deposition at 376:9-377:3.) This means that MTBE from each focus station will impact one or more production wells after entering a plume. The plume with which each station is associated is identified in Appendix A to my expert report. The wells impacted by each of these plumes are identified in paragraph 8 of my declaration submitted on July 21, 2014.
4. I understand that the Court has inquired as to whether individual stations could be isolated and run through the model to determine whether those stations, apart from their contribution to plumes, would impact production wells. This declaration responds to that inquiry.
5. As I explain in more detail below, while some (but not all) individual stations could be isolated and run through the model, such an exercise would require extraordinary time and expense, would not add to our understanding of the likely fate of MTBE contamination from these stations, and would not change my opinion that MTBE from each focus station will enter the plumes I identified and ultimately impact the wells I identified.
6. To prepare and run the fate and transport model addressed in my expert report cost approximately \$2 million and required approximately 20,000 hours of staff time. The minimum expense for performing an individual station analysis (by turning off all MTBE sources except a single station in the model) would be \$70,000 per station (not counting sensitivity runs, which cost the same as actual runs). The bare minimum time for conducting such a run would be three weeks. Since there are 34 focus stations in the model I ran, the total cost of such a “bare bone” exercise would be in excess of \$ 2 million, and the total time to conduct such an analysis would be in excess of two years. The results of these individual runs would be subject to a number of criticisms, as explained below.
7. As I stated in my deposition, expert report, and declaration, the MTBE source term for each focus station was based on all available actual MTBE detections in monitoring wells and other sampling points, such as CPT tests, associated with each focus plume station. My associates and I considered and incorporated over 42,000 detections of MTBE in groundwater in calculating the mass of MTBE modeled by the contaminant transport model.
8. While some of the 42,000 MTBE detections we reviewed could be attributed to an individual station, a significant portion of the MTBE detections were attributable to more than one station and had already commingled at the point of detection.
9. Isolating individual stations within the model would require review of each of the 42,000 detections to determine which detections could be attributed to a single source and which involved multiple sources. Attribution is particularly difficult where, as is the case here, many of the stations with MTBE releases are clustered in close proximity, such as on a street corner. When geographically distinct

stations are located above relatively stable geologic settings, MTBE releases from such stations can be separately tracked to a point of conversion with MTBE releases from other stations. When stations are clustered in close proximity to each other, however, as is the case with a number of the focus plume stations in this case, any meaningful separate tracking of releases is simply not possible. A graph depicting these clustered stations is attached to this Declaration as Exhibit A. Some examples of focus stations that are clustered in such a manner in this case are:

A. In Focus Plume #1, the Unocal #5376, Mobil #18-G6B, and Exxon #4283 are each on a separate corner of the same intersection. Shell #204359403 and Texaco #8520 as well as Texaco #121691 and Unocal #6399 are also on separate corners of the same intersection.

B. In Focus Plume #2, Mobil #18-HDR and Arco #6131 are on the same corner.

C. In Focus Plume #3, Arco #1912 is next door to the Beacon Bay Fountain Valley, and directly across the street from the Thrifty #383.

10. Localized variability in groundwater flow directions and the uniform chemical composition of MTBE make it nearly impossible to attribute MTBE detections to a single source where multiple sources are in close proximity.

11. If one were to assign a portion of a comingled MTBE detection to a single source, and utilize only that portion to run a contaminant transport model, the mass of MTBE would be knowingly understated. Because the size of the mass that is modeled impacts the rate, speed, and direction of flow, such an artificial assignment would affect the accuracy of the model. Understatement of the mass would affect when MTBE arrives at impacted wells and how much MTBE arrives at the wells. Such a model would be less reflective of reality and would certainly draw criticism from other fate and transport modelers.

12. Understating the mass by running each station individually would also interfere with calibrating each individual station model run because the model results could not be compared to real world data in any meaningful way - an essential function of calibration.

13. The contaminant transport model tracks the movement of MTBE through a series of groundwater cells by use of an algorithm. Isolating the MTBE released from a single station would require us to prepare a new input calculation for numerous additional cells beyond the location of the station. Preparing such new input calculations would significantly increase time and expense.

14. For the reasons explained above and in my deposition, it is more reflective of reality to model the focus station MTBE releases together and run the contaminant transport model to reflect the fate and transport of the focus plumes.

15. As explained above, excluding information from a model can be expected to impact the result. It is therefore preferable to include as much information as reasonably possible, and that is the approach I took in preparing my expert report and modeling work. In addition, since it is not technically feasible to make separate model runs for all service stations due to the fact that some of the stations are clustered, any model runs for stations where such runs are technically feasible would create inconsistent results between different sets of stations.

16. As I testified at my deposition, we independently verified that the focus plume stations were "the most likely sources of MTBE that has impacted or will impact drinking water wells in Orange

County” by reviewing “a million and a half pages of information” concerning these focus stations, including groundwater data. (Jan. 16, 2012, at 127:4-22 and Jan 17, 2012) at 378:23-379:11.)

17. Based on existing data, plume widths in our model are less 1,000 feet wide, and in many cases, much less than 1,000 feet wide. These plumes are sufficiently narrow that they will not bypass the production wells included in my model.

18. It would take approximately three weeks and \$70,000 per station to simply run the model for each station, without recalculating of MTBE input data, conducting additional calibration runs or conducting any sensitivity analysis.

19. After conducting the initial modeling run for each individual station, it would then be necessary to conduct a sensitivity analysis by rerunning the model a number of times to address changes in variables between each station. Each additional model run conducted for a sensitivity analysis would again take approximately three weeks and cost approximately \$70,000.

20. Overall, isolating each focus plume station would take a minimum of approximately two years, and cost in excess of \$2 million.

I declare under penalty of perjury under the laws of the State of Nevada that the foregoing is true and correct.

Executed this 21st day of July, 2014, at Reno, Nevada.



Stephen W. Wheatcraft



*In Re Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation:  
Orange County Water District v. Unocal Corp., et al., Case No. 04 Civ. 4968*

**PROOF OF SERVICE VIA LEXISNEXIS FILE AND SERVE**

I am a citizen of the United States and an employee in the County of Sacramento. I am over the age of eighteen (18) years and not a party to this action. My business address is Miller, Axline, & Sawyer, 1050 Fulton Avenue, Suite, 100, Sacramento, California 95825.

On the date executed below, I electronically served the document(s) via LexisNexis File & Serve, described below, on the recipients designated on the Transaction Receipt located on the LexisNexis File & Serve website:

**SUPPLEMENTAL DECLARATION OF STEPHEN W. WHEATCRAFT, Ph.D.  
IN SUPPORT OF PLAINTIFF'S OPPOSITION TO  
MOTION FOR SUMMARY JUDGMENT**

I declare under penalty of perjury that true and correct copies of the above document(s) were served via LexisNexis File & Serve on October 10, 2014.

  
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TONYA L. ZIMMERMAN